

## CLAIMS

What is claimed is:

1. A method for regulating glucose metabolism or a glucose metabolic process, the method comprising stabilizing HIF $\alpha$ , thereby regulating glucose metabolism or the glucose metabolic process.
2. A method for regulating glucose metabolism or a glucose metabolic process, the method comprising administering an effective amount of a compound that inhibits HIF hydroxylase activity, thereby regulating glucose metabolism or the glucose metabolic process.
3. The method of claim 1, wherein the stabilizing is in vitro.
4. The method of claim 1, wherein the stabilizing is in vivo.
5. The method of claim 2, wherein the administering is in vitro.
6. The method of claim 2, wherein the administering is in vivo.
7. A method for regulating glucose metabolism or a glucose metabolic process in a cell, the method comprising stabilizing HIF $\alpha$  in the cell, thereby regulating glucose metabolism or the glucose metabolic process in the cell.
8. A method for regulating glucose metabolism or a glucose metabolic process in a cell, the method comprising administering to the cell an effective amount of a compound that inhibits HIF hydroxylase activity in the cell, thereby regulating glucose metabolism or the glucose metabolic process in the cell.
9. A method for regulating glucose metabolism or a glucose metabolic process in a subject, the method comprising stabilizing HIF $\alpha$  in the subject, thereby regulating glucose metabolism or a glucose metabolic process in the subject.

10. A method for regulating glucose metabolism or a glucose metabolic process in a subject, the method comprising administering to the subject an effective amount of a compound that inhibits HIF hydroxylase activity in the subject, thereby regulating glucose metabolism or the glucose metabolic process in the subject.
11. The method of claim 1, wherein the stabilizing HIF $\alpha$  comprises administering a compound that inhibits HIF hydroxylase activity, thereby stabilizing HIF $\alpha$ .
12. The method of any of claims 2, 8, 10, or 11, wherein the HIF hydroxylase activity is HIF prolyl hydroxylase activity.
13. The method of claim 9, wherein the subject is an animal.
14. The method of claim 9, wherein the subject is a mammal.
15. The method of claim 9, wherein the subject is a human.
16. The method of claim 1, wherein the glucose metabolic process is selected from the group consisting of glucose uptake, glucose transport, glucose storage, glucose processing, and glucose utilization.
17. The method of claim 1, wherein HIF $\alpha$  is selected from the group consisting of HIF1 $\alpha$ , HIF2 $\alpha$ , and HIF3 $\alpha$ .
18. The method of claim 12, wherein the HIF prolyl hydroxylase is selected from the group consisting of EGLN1, EGLN2, AND EGLN3.
19. A method for achieving glucose homeostasis in a subject, the method comprising stabilizing HIF $\alpha$  in the subject, thereby achieving glucose homeostasis in the subject.
20. A method for decreasing blood glucose levels in a subject, the method comprising stabilizing HIF  $\alpha$  in the subject, thereby decreasing blood glucose levels in the subject.

21. A method for decreasing glycated hemoglobin levels in a subject, the method comprising stabilizing HIF $\alpha$  in the subject, thereby decreasing glycated hemoglobin levels in the subject.
22. A method for altering expression of a glucose regulatory factor, the method comprising stabilizing HIF $\alpha$ , thereby altering expression of the glucose regulatory factor.
23. The method of claim 22, wherein the glucose regulatory factor is selected from the group consisting of PFK-P, PFK-L, enolase-1, GluT-1, lactate dehydrogenase, aldolase-1, hexokinase-1, IGFBP-1, and IGF.
24. The method of claim 22, wherein the altering expression of the glucose regulatory factor in the subject is increasing expression of the glucose regulatory factor.
25. A method for altering expression of a glycolytic factor, the method comprising stabilizing HIF $\alpha$ , thereby altering expression of the glycolytic factor.
26. The method of claim 25, wherein the glycolytic factor is selected from the group consisting of PFK-P, PFK-L, enolase-1, lactate dehydrogenase, aldolase-1, and hexokinase-1.
27. A method for treating or preventing diabetes in a subject having or at risk for developing diabetes, the method comprising stabilizing HIF $\alpha$  in the subject, thereby treating or preventing diabetes in the subject.
28. A method for treating or preventing a disorder associated with increased blood glucose levels in a subject, the method comprising stabilizing HIF $\alpha$  in the subject, thereby treating or preventing the disorder associated with increased blood glucose levels in the subject.
29. The method of claim 28, wherein the disorder associated with increased blood glucose levels is selected from the group consisting of diabetes, hyperglycemia, obesity, hypertension, hyperlipidemia, nephropathy, neuropathy, retinopathy, impaired glucose tolerance, atherosclerosis, and vascular disease.

30. A method for treating or preventing a condition associated with diabetes in a subject, the method comprising stabilizing HIF $\alpha$  in the subject, thereby treating or preventing the condition associated with diabetes.
31. The method of claim 30, wherein the condition associated with diabetes is selected from the group consisting of hyperglycemia, obesity, hypertension, hyperlipidemia, nephropathy, neuropathy, retinopathy, impaired glucose tolerance, atherosclerosis, and vascular disease.
32. The method of claim 20, wherein the subject is a subject having diabetes.
33. The method of claim 20, wherein the subject is a subject at risk for having diabetes.
34. A method for decreasing blood triglyceride levels in a subject, the method comprising stabilizing HIF $\alpha$  in the subject, thereby decreasing blood triglyceride levels in the subject.
35. A method for reducing insulin resistance in a subject, the method comprising stabilizing HIF $\alpha$  in the subject, thereby reducing insulin resistance in the subject.
36. A method for increasing glycemic control in a subject, the method comprising stabilizing HIF $\alpha$  in the subject, thereby increasing glycemic control.
37. The method of claim 36, wherein the subject is a subject having hyperglycemia.